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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,034	07/23/2003	Ruihong H. Zhang	023070-128610US	1260

20350 7590 02/04/2005

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EXAMINER
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PRINCE, FRED G

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/626,034

Applicant(s)

ZHANG ET AL.

Examiner

Fred Prince

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-10 and 14-40 is/are rejected.
- 7) ☒ Claim(s) 4 and 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0904.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 39 is objected to because of the following informalities: It appears that in line 4, "permeate" should be changed to --concentrate--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 26, 28-29, 37-39, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Narukami et al. (JP 05-309391).

Narukami et al. teach a method of treating wastewater including the steps of treating wastewater under anaerobic conditions in an anaerobic reactor (12), treating effluent under aerobic conditions in an aerobic reactor (13), passing effluent from the aerobic reactor through a filtration device (14), passing the effluent through a desalinization device (19) including a reverse osmosis unit to form an effluent (24), removing sludge via a sludge holding tank (22) inherently capable of dewatering sludge

since the tank discharges settled (i.e., dewatered) sludge, and adding flocculent chemicals (21).

Per claim 39, it is submitted that the recitations of the permeate being reclaimed water and the concentrate being liquid fertilizer are functional limitations of intended use, not deemed to add structure to the claimed method. Accordingly, it is submitted that the permeate and concentrate are capable of the claimed use and therefore meet the recited limitations.

3. Claims 26-29, 36-37, 39, and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Daigger et al.

Daigger et al. teach a method of treating wastewater including the steps of treating wastewater under anaerobic conditions in an anaerobic reactor (30, 32; col. 5, lines 7-12), treating effluent under aerobic conditions in two aerobic reactors (34, 38), passing effluent from the aerobic reactors through a filtration device (56), passing the effluent through a desalinization device (80) including a reverse osmosis unit to form an effluent (74), removing sludge via a sludge holding tank (16) inherently capable of dewatering sludge since the tank discharges settled (i.e., dewatered) sludge (64), and adding flocculent chemicals (84).

Per claim 39, it is submitted that the recitations of the permeate being reclaimed water and the concentrate being liquid fertilizer are functional limitations of intended use, not deemed to add structure to the permeate and concentrate, respectively. Accordingly, it is submitted that the permeate and concentrate are capable of the claimed use and therefore meet the recited limitations.

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4. Claims 26, 30-32, 35-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Oswald et al.

Oswald et al. teach a method of treating wastewater including the steps of treating wastewater under anaerobic conditions in an anaerobic reactor (112) including a gas outlet, capturing methane (col. 3, lines 1-4), treating effluent under aerobic conditions in an aerobic reactor (114), passing effluent from the aerobic reactors through a filtration device (sand filter, cartridge filters), passing the effluent through a desalinization device including a reverse osmosis unit to form an effluent, adding flocculent chemicals (col. 5, lines 26-39), wherein the wastewater includes household wastewater which inherently comprises the recited waste products and fermentation wastes.

Per claim 39, it is submitted that the recitations of the permeate being reclaimed water and the concentrate being liquid fertilizer are functional limitations of intended use, not deemed to add structure to the permeate and concentrate, respectively. Accordingly, it is submitted that the permeate and concentrate are capable of the claimed use and therefore meet the recited limitations.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-2, 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oswald et al.

Oswald et al. disclose an anaerobic reactor (112) including a gas outlet and gas is captured from the outlet (col. 3; lines 1-5), an aerobic reactor (114) including an aeration device (col. 3, lines 59-61), a filtration device (122, cartridge filters), a desalinization device (RO membranes) having a permeate outlet and concentrate outlet (Fig. 1), wherein the wastewater includes household wastewater which inherently comprises the recited waste products and fermentation wastes. Oswald et al. do not explicitly disclose conduits connecting each of the recited components.

It is conventional in the art to provide conduits between distinct treatment zones in order to, for instance, provide fluid communication between the distinct zones. Accordingly, it would have been obvious for the skilled artisan to have provided the system of Oswald et al. with conduits connecting each treatment zone in order to, for instance, provide fluid communication between the distinct zones.

7. Claims 1-3, 5-8, 9-10, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daigger et al.

Daigger et al. disclose an anaerobic reactor (30), two aerobic reactors (34, 38) including aeration devices (48, 45), a filtration device (56), a desalinization device (80) inherently having a permeate outlet and concentrate outlet, wherein the wastewater includes household wastewater which inherently comprises the recited waste products and fermentation wastes. Daigger et al. also discloses that each of the zones may be

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provided as a separate vessel connected by conduits (col. 5, lines 7-12). Daigger et al. do not explicitly disclose conduits being connecting in the exact manner recited.

It is conventional in the art to provide conduits between distinct treatment zones in order to, for instance, provide fluid communication between the distinct zones. Accordingly, it would have been obvious for the skilled artisan to have provided the system of Daigger et al. with conduits connecting each treatment zone in order to, for instance, provide fluid communication between the distinct zones.

Per claims 9 and 15, Daigger et al. do not disclose using the recited presses to dewater sludge.

It is submitted that it is conventional in the art to dewater sludge using any one of the above presses in order to, for instance, reduce the overall volume of sludge to be trucked to a landfill or receive further treatment. Accordingly, it would have been obvious for the skilled artisan to have provided any one of the recited presses for dewatering the sludge in order to, for instance, reduce the overall volume of sludge to be trucked to a landfill or receive further treatment, as known in the art.

Per claims 16 and 17, Daigger et al. do not disclose using the recited SBRs.

It is submitted that it is conventional in the art of wastewater treatment to use an ABSBR or ASBR in order to, for example, treat various wastewater in a non-continuous manner. Accordingly, it would have been well within the purview of the skilled artisan to have modified the method of any one of the above references such that it includes an ABSBR or ASBR in order to, for example, treat various wastewater in a non-continuous manner, as known in the art.

8. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Narukami et al., Daigger et al., and Oswald et al.

The three references are described above. None of the references explicitly discloses using an ABSBR or ASBR.

It is submitted that it is conventional in the art of wastewater treatment to use an ABSBR or ASBR in order to, for example, treat various wastewater in a non-continuous manner. Accordingly, it would have been well within the purview of the skilled artisan to have modified the method of any one of the above references such that it includes an ABSBR or ASBR in order to, for example, treat various wastewater in a non-continuous manner, as known in the art.

***Allowable Subject Matter***

9. Claims 4 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: While claims 3 and 10 are not allowable for the reasons provided above, in the examiner's opinion, the prior art fails to teach or fairly suggest the system having conduits and/or valves having the reciting positioning and operational elements. The instant invention provides the advantage of facilitating operational flexibility when filtering aerated wastewater.


***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References are cited of interest to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Prince whose telephone number is (571) 272-1165. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Fred Prince  
Primary Examiner  
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